

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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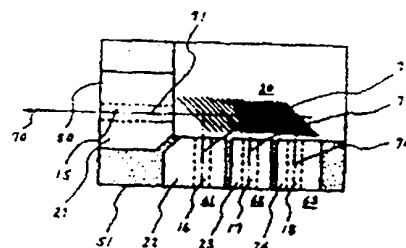
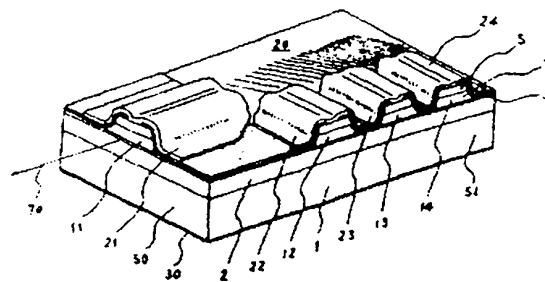
APPLICATION DATE : 22-10-79  
APPLICATION NUMBER : 54136199

APPLICANT : NEC CORP;

INVENTOR : KOBAYASHI ISAO;

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TITLE : MULTIWAVELENGTH LIGHT SOURCE



ABSTRACT : PURPOSE: To manufacture the multiwavelength light source integrated with a small multiplexing circuit loss in a simple step by bending a light beam by a Charp grating varying smoothly at the interval between grooves and multiplexing a plurality of laser lights.

CONSTITUTION: Reflecting end faces 50, 51 are formed on a semiconductor substrate 1 containing an active layer, and a plurality of bandlike current injection parts 16, 17, 18 and common bandlike current injection part 15 are formed along the reflecting end faces. The Charp grating 20 varying smoothly at the interval between the grooves is used as means for bending the light beam. The Charp grating 20 can be formed by one exposure of the interference between the parallel light and condensed light, and the step of manufacturing the same can be simplified. For example, when the periods of the parts for bending the laser lights 61, 62, 63 are 0.169, 0.167, 0.165 $\mu$ m and the lights are oscillated at 0.86, 0.85 and 0.84 $\mu$ m, there can be produced an output light beam 70 thus synthesized.

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